Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Amendment of Part 97 of the Commission's Rules Governing the Amateur Radio Service to Facilitate Spread Spectrum Communications	)))))	RM 8737

To: The Commission

REPLY COMMENTS
OF
METRICOM, INC.

Metricom, Inc. ("Metricom"), by its attorneys, pursuant to Section 1.405(b), hereby submits these Reply Comments in response to Comments filed on the above-styled Petition For Rule Making of the American Radio Relay League ("ARRL"). The ARRL Petition requests an amendment of the Rules to permit expanded spread spectrum authorization for Amateur operations. Twelve parties commented on the ARRL proposal and only four parties supported the Petition in whole.

1. While Metricom does not oppose the Petition, one important issue appeared to Metricom as it reviewed the Comments filed: the Commission must consider carefully the enormous negative impact Amateur spread spectrum operations would have on the delicate balance that has been established in the Industrial, Scientific and Medical ("ISM") bands which are shared by ISM, Part 15 unlicensed, commercial and Amateur operations. If the Commission decides to go forward with a Notice of Proposed Rule

Making in response to the ARRL Petition, Amateur spread spectrum operations should not be permitted in the shared ISM bands because of the significant negative impact those operations would create.

2. Metricom is a young, rapidly growing, wireless telecommunications company based in California's Silicon Valley. Metricom is a pioneer in the development of state-of-the-art, spread spectrum, unlicensed data communications systems operating under Part 15 of the Commission's Rules and Regulations in the 902-928 MHz frequency band. Metricom's frequency hopping, spread spectrum systems -- at the leading edge of technology -- had their origins in Amateur radio. The experimentation which was done with spread spectrum Amateur radio enabled Metricom to develop an innovative mesh network architecture that permits cost-effective, intelligent and flexible data communications operating at a gross over-the-air transmission rate of 100 kbps -- the fastest wide area (regional) wireless data network available today.

3. Based on its beginnings, Metricom fully understands and appreciates the need for experimentation in Amateur operations. However, this requirement must be tempered by striving to maintain the delicate balance the Commission has established in various shared bands. Because Amateurs are allowed to operate with 100 watts output power and unlimited antenna gain, Metricom is concerned that if Amateurs commence spread spectrum operations in the ISM bands (e.g., 902-928 MHz and 2400-2483.5 MHz) that are

extensively shared by many different users in different services, the careful balance which the Commission has developed for the sharing of these bands by divergent users would be disturbed.

4. For example, the 902-928 MHz band readily comes to mind because of the long proceeding, which has yet to be completed, In re Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, PR Docket No. 93-61, 10 FCC Rcd 4695 (1995). As the Commission is well aware, this proceeding, originally instituted in March of 1993, involves, among other things, competing Part 90 and Part 15 interests in the band. One of the major contentions in the proceeding is that the low power (1 watt) Part 15 operations will interfere with the higher powered Part 90 licensed service. After a voluminous record was developed over a long period of time, the Commission fashioned a compromise position in its Report and Order, adopted in 1995, where both types of operations could co-exist in the band. The Commission's Order was the subject of numerous Petitions For Reconsideration which are still pending.

5. The delicate compromise constructed by the Commission in the Automatic Vehicle Monitoring System proceeding could be negated if spread spectrum Amateur operations were permitted in the band with 100 watts output power and unlimited antenna gain. Obviously, the Part 90 licensed services would experience significant interference because they are concerned with Part 15's one watt

operations. Imagine the impact of an Amateur spread spectrum operation at, for example, 1 kW (100 watts output power and 10dB antenna gain).

6. The Part 15 spread spectrum operations in the 902-928 MHz band would also experience significant interference if Amateur spread spectrum operations were allowed in the band. The argument presented by the Mid-America Coordination Council, Incorporated, at page 5 of its February 26, 1996 Statement in Opposition, that Amateur spread spectrum operations should be confined to the 902-928 MHz band "where it can co-exist with other SS users" is clearly erroneous. Even though both the Part 15 operations and the Amateur operations are spread spectrum, because of the enormous difference in authorized power, Part 15 operations would be severely impacted.

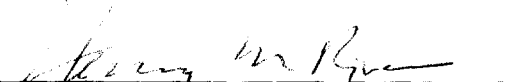
7. Metricom is concerned that some parties have suggested that Amateur spread spectrum operations be conducted in the 902-928 MHz band because spread spectrum "[e]quipment for operation on 902-928 MHz is inexpensive and readily available from Part 15 suppliers." (Comments of Henry B. Ruh KB9FO, p.2.) If Amateur operators were permitted to use "off the shelf" equipment designed for low power operations in a shared, congested environment, and merely boost the output power up to 100 watts, with unlimited antenna gain, this would obviously have a severe negative impact on other operations in the band.

8. Prohibiting Amateur spread spectrum operations in shared ISM bands would not work a hardship on Amateurs. There are sufficient frequency bands available for Amateur spread spectrum operations outside of the shared ISM bands (e.g., 1240-1300 MHz, 2300-2310 MHz, 3.3-3.5 GHz, etc.).

9. Based on the delicate balance established by the Commission for the shared use of the ISM bands, and because there are other suitable frequency bands available for Amateur spread spectrum operations, there are no sound public policy reasons to disturb that balance. Accordingly, the Commission should not adopt a Notice of Proposed Rule Making which provides for the type of spread spectrum operation as proposed in ARRL's Petition within the shared ISM bands.

Respectfully submitted,

METRICOM, INC.

By: 

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Dated: March 12, 1996

CERTIFICATE OF SERVICE

I, Wendy A. Yascur, hereby certify that a copy of the foregoing Reply Comments were served this 12th day of March, 1996, upon the following:

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